

**Remarks**

Claims 1-2, 8-15 and 21-26 are pending. Claims 13 and 26 are amended for clarity.

***Claim Rejections – 35 U.S.C. § 112***

The Examiner rejected Claim 11 and 26 under 35 U.S.C. § 112, second paragraph, as being indefinite. Because Claim 11 does not recite the phrase “from time to time” that the Examiner objected, Applicant believes that the Examiner had intended to reject Claim 13, in which the phrase is recited. As amended, Applicant respectfully submits that Claims 11 and 26 fully comply with 35 U.S.C. § 112, second paragraph.

***Claim Rejections – 35 USC §103***

The Examiner substantially repeated his previous rejection in the Office Action of February 6, 2008 (“Previous Office Action”) of Claim 1-2, 8-10, 14-15 and 21-23 under 35 U.S.C. § 103(a) as being obvious over the article “A Distributed Event Logging System” (“Jaiswal”), in view of the article “Netlogger: A Toolkit for Distributed System Performance Analysis” (“Gunter”) and the description for xntpd (1Mtcp) (“xntpd”). With respect to independent Claims 1 and 14, the Examiner states:

3.     Claims 1 and 14 are rejected for the following reasons:

Jaiswal teaches:

A distributed system comprising: a plurality of cooperative processes running on a plurality of processors of a computer network to accomplish a distributed transaction.(Page 1 para 2) each process logging in a local resource records of execution of the distributed transaction by the process on its processor; and a search engine running on each of the plurality of processors.(Section 5 para 2) each search engine retrieving corresponding records of execution in response to a query regarding the distributed transaction (Section 6).

Jaiswal fails to expressly disclose:

A system synchronizer sending a timing message to be

logged from time to time to the plurality of cooperative processes;

However, this limitation would have been obvious in view of Gunter which was NTP and xntpd to synchronize the time of all the servers in a distributed processing system, and xntpd which teaches the logging of the periodic timing messages received by servers as part of the xntpd daemon used (monitoring option).

Gunter:

## 2.1 Clock Synchronization: NTP

To analyze a network-based system using time-stamps, the clocks of all systems involved must be synchronized. This can be achieved by using the Network Time Protocol (NTP) [10]. By installing a GPS-based NTP server on each subnet of the distributed system, and running the *xntpd* daemon on each host, all the clocks can be synchronized to within about 0.25 ms of each other. It has been our experience that most application-significant events can be accurately characterized by timestamps that are accurate to about 1 ms, well within NTP's tolerances. If the closest time source is several IP router hops away, NTP accuracy will be somewhat less, but probably still be accurate enough for many types of analysis. The NTP web site<sup>2</sup> has a list of public NTP servers that one may be able to connect and synchronize with.

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to include these features, as they provide more accurate timing to provide more accurate analysis.

In response to the Examiner's rejection in the Previous Office Action, Applicant amended Claims 1 and 14 in the Response to Office Action of June 6, 2008 ("Previous Response"). In the Previous Response, Applicant pointed out that Claim 1 recites a process which logs records of execution for distributed transactions. The logging allows the distributed transactions to be subsequently queried using a search engine:

1. (Previously presented) A distributed system comprising:

a plurality of cooperative processes running on a plurality of processors of a computer network to accomplish a distributed transaction, each process logging, in a local resource, records of execution of the distributed transaction by the process on its processor; and

a system synchronizer sending a timing message to be logged to the plurality of cooperative processes;

a search engine running on each of the plurality of processors, each search engine retrieving corresponding records of execution in response to a query regarding the distributed transaction.

(emphasis added)

Applicant explained that, as illustrated in Applicant's Specification, at page 5, lines 26-34, Claim 1's system has the unobvious advantage, for example, of allowing detailed examination of the execution of a distributed transaction (e.g., debugging a failed transaction). Applicant further pointed out that, as discussed in the Specification, at page 6, lines 31-33, conventional wisdom does not teach using a search engine to carry out distributed debugging or transaction tracking. Pointing to Jaiswal's disclosure, at page 1, paragraph 2 -- upon which the Examiner relied for his rejection – Applicant explained that Jaiswal merely discloses logging system performance data, but not records of execution of distributed transactions. Thus, Applicant demonstrated that Jaiswal neither discloses nor suggests Claim 1. Since neither Gunter nor xntpd discuss distributed transactions, Applicant concluded in the Previous Response that independent Claim 1 and its dependent Claims 2 and 8-10 are each unobvious and thus allowable over the combined teachings of Jaiwal, Gunter and xntpd. For substantially the same reasons, Applicant explained that Claims 14-15 and 21-23 are each similarly also allowable over the combined teachings of Jaiswal, Gunter and xntpd.

In response to Applicant's Previous Response, the Examiner states in the present Office Action of August 19, 2008, disputing Applicant's conclusion that Jaiswal does not teach logging records of execution of distributed transactions:

In response to the applicant's arguments that Jaiswal does not teach logging "records of execution of distributed transactions", the arguments have been fully considered, but are not deemed persuasive. It is noted that the applicant's characterization of Jaiswal as simply "logging system performance data" appears to be incorrect. The second paragraph of Jaiswal says the log can be used for monitoring and troubleshooting and to deter and detect attempts to break into the system. Further, section 4 of Jaiswal goes into what is logged in the system including a timestamp, process ID (PID), user, host, process, and message. All of this information is logged and capable of being queried. The bottom of page 4 gives an example of some transactions that have been logged in the log file. In the second paragraph of section 5, an example query is put forth that is a query for all logs generated by the apache application. Therefore, it is believed that Jaiswal does in fact teach log records of the execution of distributed transactions.

Applicant respectfully submits that the Examiner is mistaken. The Jaiswal's discussions at sections 4 and 5 that the Examiner relied upon are merely event logs that do not relate to records of execution of distributed transactions. In fact, in Section 3 "Distributed Event Logging System: Overview" (page 3), second paragraph, Jaiswal expressly teaches that its system is strictly an event logging system, which has no need to save any record at the transaction level:

The reason we do not need a more powerful SQL server is that the system is more of a distributed query tool and does not need any transaction semantics. We simply need some basic queries that allow a system administrator to extract meaningful information from the logs, while at the same time presenting the notion of a central repository of such logs (while the underlying implementation is distributed). In other words, here's a tool that gives you all the information you need about any events occurring on any of the machines in that network. It also makes it easier to correlate events.

(emphasis added)

Hence, the Examiner is incorrect that “Jaiswal does in fact teach log records of the execution of distributed transactions.” Accordingly, Applicant respectfully submits that Claims 1-2, 8-10, 14-15 and 21-23 are each allowable over the combined teachings of Jaiswal, Gunter and xntpd. Reconsideration and allowance of these claims are therefore requested.

The Examiner rejected Claims 11-12 and 24-25 under 35 U.S.C. § 103(a) as being unpatentable over Jaiswal, in view of Gunter and xntpd, and further in view of U.S. Patent 6,657,517 (“Dickey”). The Examiner states:

Claims 11-12, and 24-25 are rejected as Jaiswel as modified, teaches periodically backing up log files and stating a new file in section 4 para 2, however Jaiswel as modified, fails to teach how the logs are stored. Dickey col 2 lines 1-14 teaches storing initially in memory, Col 5 lines 31-39 teaches offloading to a disk storage. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to include these features, as using memory is fast, and using disk memory for old or backup data is cheaper.

Applicant respectfully traverses the Examiner’s rejection. As Claims 11-12 and 24-25 each depend from independent Claims 1 and 14, respectively, each of Claims 11-12 and 24-25 are allowable over the combined teachings of Jaiswal, Gunter and xntpd for the reason set forth above with respect to Claims 1 and 14. As Dickey provides no teaching that would cure the deficiency in the combined teachings of Jaiswal, Gunter and xntpd, Claims 11-12 and 24-25 are each allowable over the combined teachings of Jaiswal, Gunter, xntpd and Dickey. Reconsideration and allowance of Claims 11-12 and 24-25 are therefore requested.

The Examiner rejected Claims 13 and 26 under 35 U.S.C. § 103(a) as being unpatentable over Jaiswal, in view of Gunter and xntpd, further in view of Dickey, and further

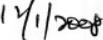
in view of U.S. Patent 6,330,570 ("Crighton") or U.S. Patent 6,618,882 ("Loaiza"). The Examiner states:

Jaiswel as modified, teaches the claims upon which claims 13 and 26 are dependent, but fail to expressly disclose the merger of the indices in memory and in the disk storage. This is taught in Crighton Col 6 lines 40-48 which teaches an append type backup, by appending in this manner would cause the current file (the one stored in memory in this case) to be appended (and thus merged with) to the backup copy (the indices on the disk) Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to add this feature do to the advantage of providing a backup contains all previous log data) In the alternative, Loaiza also teaches this limitation as it teaches querying ranges of time in col 16 lines 1-14, thus in the instance were the range included both to backup and the current file the two would be merged as query results are merged as discussed in claim 8. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to include this feature to provide the advantage of narrowing the search to a date range.

Applicant respectfully traverses the Examiner's rejection. As Claims 13 and 26 each depend from Claims 11 and 24, respectively, each of Claims 13 and 26 are allowable over the combined teachings of Jaiswal, Gunter, xntpD and Dickey for the reason set forth above with respect to Claims 11 and 24. As neither Crighton or Loaiza provides any teaching that would cure the deficiency in the combined teachings of Jaiswal, Gunter, xntpD and Dickey, Claims 13 and 26 are each allowable over the combined teachings of Jaiswal, Gunter, xntpD, Dickey and Crighton or Loaiza. Reconsideration and allowance of Claims 13 and 26 are therefore requested.

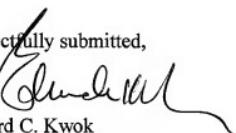
Accordingly, Claims 1-2, 8-15 and 21-26 are believed allowable. If the Examiner has any question regarding the above, the Examiner is respectfully requested to telephone the undersigned Attorney for Applicant at (408)-392-9250.

Certificate of Transmission: I hereby certify that this correspondence is being transmitted to the United States Patent and Trademark Office (USPTO) via the USPTO's electronic filing system on December 1, 2008.

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Attorney for Applicant(s)

Date of Signature

Respectfully submitted,

  
Edward C. Kwok  
Attorney for Applicant(s)  
Reg. No. 33,938

Law Offices of  
MacPherson Kwok Chen & Heid LLP  
2033 Gateway Place, Suite 400  
San Jose, CA 95110  
Tel: (408) 392-9250  
Fax: (408) 392-9262